Claims

1. A method for optical distance measurement, in which at least one transmission unit of a transmission branch (14) of a measuring device (10) transmits modulated measurement beam (16, 36) in the direction of a target object (20), and the measurement beam (17, 44) returning from the target object (20) is detected in the measuring device (10) by at least one measuring diode (62), present in a reception branch (18) of the device (10), and delivered to a control and evaluation unit (58) of the measuring device, and the at least one measuring diode (62) of the reception branch (18) is also used as a frequency-mixing component for transformation of a measurement signal to be evaluated, characterized in that besides the cathode voltage U_K ($U_K = U_0 + u_K(t)$) of the measuring diode (62), an anode voltage U_A of the measuring diode (62) is also modulated ($U_A = u_A(t)$).

2. The method for optical distance measurement of claim 1, characterized in that the anode voltage U_A is modulated ($U_A = u_A(t) = -u_K(t)$) with the inverted, modulated cathode voltage ($-u_K(t)$).

3. The method for optical distance measurement of claim 1 or 2, characterized in that the modulated cathode voltage $u_K(t)$ and the modulated anode voltage $u_A(t)$ is generated by a common modulator (64).

4. An apparatus for optical distance measurement having at least one transmitter (14) with at least one transmitter (22, 24) for transmitting modulated measurement beam (16, 36) in the direction of a target object (20), and having at least one reception branch (18) with at least one measurement

receiver for receiving the measurement beam (17, 44) returning from the target object (20), and the measurement receiver (54) is provided with a photodiode (62) acting as a frequency mixer element, and having a control and evaluation unit (58) for ascertaining the distance from the apparatus (10) to the target object (20), characterized in that a diode bias voltage applied to the diode (62) is modulated on both the cathode and anode sides.

5. The apparatus of claim 4, characterized in that the anode voltage $u_A(t)$ that modulates the anode side is essentially equal to the inverted cathode voltage $u_K(t)$ ($u_A(t) = -u_K(t)$) modulated on the cathode side of the diode.

6. The apparatus of claim 4 or 5, characterized in that the apparatus has the modulator (64), with the aid of which both the modulated cathode voltage u_K and the modulated anode voltage u_A can be generated.

7. The apparatus of claim 6, characterized in that electrical connecting means (65) which have at least one adaptation network (66, 68) are provided between the modulator (64) for generating the modulated cathode voltage and anode voltage and the diode (62) used as a mixer element.

8. The apparatus of one of claims 4 through 7, characterized in that the photodiode (62) is an avalanche photodiode.